

=> d his

(FILE 'HOME' ENTERED AT 10:59:56 ON 16 JUL 2003)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 11:00:08 ON 16 JUL 2003

SEA GLYCOSYLHYDROLASE OR ENDOGLUCANASE

-----  
1 FILE ADISCTI  
539 FILE AGRICOLA  
15 FILE ANABSTR  
25 FILE AQUASCI  
341 FILE BIOBUSINESS  
13 FILE BIOCOMMERCE  
1861 FILE BIOSIS  
879 FILE BIOTECHABS  
879 FILE BIOTECHDS  
881 FILE BIOTECHNO  
684 FILE CABA  
19 FILE CANCERLIT  
2921 FILE CAPLUS  
444 FILE CEABA-VTB  
7 FILE CIN  
30 FILE CONFSCI  
2 FILE CROPB  
16 FILE CROPU  
1803 FILE DGENE  
1 FILE DRUGU  
10 FILE EMBAL  
869 FILE EMBASE  
657 FILE ESBIODBASE  
33 FILE FEDRIP  
1 FILE FOREGE  
81 FILE FROSTI  
524 FILE FSTA  
1060 FILE GENBANK  
2 FILE HEALSAFE  
194 FILE IFIPAT  
116 FILE JICST-EPLUS  
4 FILE KOSMET  
1000 FILE LIFESCI  
922 FILE MEDLINE  
40 FILE NTIS  
7 FILE OCEAN  
857 FILE PASCAL  
1 FILE PHIN  
15 FILE PROMT  
1 FILE RDISCLOSURE  
1725 FILE SCISEARCH  
291 FILE TOXCENTER  
719 FILE USPATFULL  
23 FILE USPAT2  
19 FILE VETU  
179 FILE WPIDS  
179 FILE WPINDEX

QUE GLYCOSYLHYDROLASE OR ENDOGLUCANASE

FILE 'CAPLUS, BIOSIS, SCISEARCH, LIFESCI, MEDLINE, BIOTECHNO, BIOTECHDS, EMBASE, PASCAL' ENTERED AT 11:02:05 ON 16 JUL 2003

L1

L2  
L3

9 S L1 AND (Y245 OR Y245G OR TYROSINE245 OR POSITION 245)  
2 DUP REM L2 (7 DUPLICATES REMOVED)

=> d 13 ibib ab 1-2

L3 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1  
ACCESSION NUMBER: 2002:323635 CAPLUS  
DOCUMENT NUMBER: 137:43353  
TITLE: Effect of single active-site cleft mutation on product  
specificity in a thermostable bacterial cellulase  
AUTHOR(S): Rignall, Tauna R.; Baker, John O.; McCarter, Suzanne  
L.; Adney, William S.; Vinzant, Todd B.; Decker,  
Stephen R.; Himmel, Michael E.  
CORPORATE SOURCE: Biotechnology for Fuels and Chemicals Division,  
National Bioenergy Center, National Renewable Energy  
Laboratory, Golden, CO, 80401, USA  
SOURCE: Applied Biochemistry and Biotechnology (2002),  
98-100(Biotechnology for Fuels and Chemicals), 383-394  
CODEN: ABIBDL; ISSN: 0273-2289  
PUBLISHER: Humana Press Inc.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Mutation of a single active-site cleft tyrosyl residue to a glycyl residue  
significantly changes the mixt. of products released from phosphoric  
acids-wollen cellulose (PSC) by E1cd, the catalytic domain of the  
**endoglucanase-I** from *Acidothermus cellulolyticus*. The percentage  
of glucose in the product stream is almost 40% greater for the  
**Y245G** mutant (and for an addnl. double mutant, **Y245G**  
/Q204A) than for the wild type enzyme. Comparisons of results for  
digestion PSC and of pretreated yellow poplar suggest that the obsd.  
shifts in product specificity are connected to the hydrolysis of a more  
easily digestible fraction of both substrates. A model is presented that  
relates the changes in product specificity to a mutation-driven shift in  
indexing of the polymeric substrate along the extended binding-site cleft.  
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 2  
ACCESSION NUMBER: 2000:824394 CAPLUS  
DOCUMENT NUMBER: 134:2062  
TITLE: *Acidothermus cellulolyticus* E1 **endoglucanase**  
variants **Y245G**, Y82R and W42R with increased  
catalytic activity  
INVENTOR(S): Himmel, Michael E.; Adney, William S.; Baker, John O.;  
Vinzant, Todd B.; Thomas, Steven R.; Sakon, Joshua;  
Decker, Stephen R.  
PATENT ASSIGNEE(S): Midwest Research Institute, USA  
SOURCE: PCT Int. Appl., 30 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000070031	A1	20001123	WO 2000-US13971	20000519
WO 2000070031	C2	20020704		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,			

TP248.3  
A68

CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
EP 1179051 A1 20020213 EP 2000-937647 20000519  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO  
US 2003054535 A1 20030320 US 2001-997504 20011119  
PRIORITY APPLN. INFO.: US 1999-134925P P 19990519  
WO 2000-US13971 W 20000519

AB The invention provides a method for making a glycosyl hydrolase characterized by an increase in catalytic activity on an insol. substrate. An active site assocd. glycosyl-stabilizing amino acid of the hydrolase is thus replaced with an amino acid, the replacing amino acid not strongly binding a disaccharide product in the active site. The method for making a glycosyl hydrolase characterized by an increase in catalytic activity on a sol. substrate comprises replacing a hydrophobic substrate binding amino acid of the hydrolase with a pos. charged amino acid. The invention specifically provides *Acidothermus cellulolyticus* E1 **endoglucanase** variants, comprising Y42R, W82R, or **Y245G**, and the DNA sequences encoding the enzymes.  $K_i$  values for inhibition of hydrolysis of 4-.beta.-D-cellobioside by native and **Y245G** mutant E1 indicate that the mutant catalytic domain binds cellobiose 15-fold less tightly than does the native enzyme, i.e., an increase in  $K_i$  from 2 to 30 mM cellobiose and a decrease in apparent binding energy of 1.7 kcal/mol.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT